



Cranfield
Environment
and Agrifood



Postgraduate
master's courses in

Environment

Academic year 2022/23 entry

Environmental Engineering MSc
Environmental Management for Business MSc
Geographical Information Management MSc
Global Environmental Change MSc
Sustainability MSc

Cranfield University

We are the UK's only specialist postgraduate university in technology and management, with longstanding relationships with some of the most prestigious global companies. Our close collaboration with industry, and passion for the areas we operate in, will help your career.

Specialist postgraduate

A research-focused professional community

81%

of our research is world-leading or internationally excellent

Research Excellence Framework (REF) 2014



THE QUEEN'S ANNIVERSARY PRIZES FOR HIGHER AND FURTHER EDUCATION 2019

Over £150 million

of investment in new facilities over the past five years

Six-time winner of

the Queen's Anniversary Prize for Higher and Further Education

A professional network of **70,000+** alumni, from 177 countries

5,000+ postgraduate students from 100+ countries

UK Top 5 for Engineering (Mechanical, Aeronautical and Manufacturing) QS World University Rankings by subject, 2021

As we are postgraduate only, we are not listed in league tables that help compare undergraduate universities, such as *The Times World Rankings* and *The Complete University Guide*.

"Studying at Cranfield taught me a great deal, not only in terms of course content but also the vital professional skill of time management, which was particularly useful as a part-time student when needing to balance my professional career with my academic studies. I thoroughly enjoyed the GIM course, particularly its holistic nature which ensures students are taught about all facets of GIS. Likewise, the professional attitude the staff at Cranfield commit to the students has been invaluable to my own personal development."

Harry Sturley, Planning Information Officer, current student, (Geographical Information Management MSc)



Reasons to study environment with us

1 Employment opportunities

The increased global focus on the environmental issues we face today provides a real opportunity to develop a career that will really make a difference to the world we live in and the post Covid-19 green economic recovery. Studying an Environment MSc at Cranfield will equip you with the knowledge and skills to be instrumental in leading change for a greener, more sustainable and resilient world. As a result many of our students secure relevant jobs before completing their course.

2 Leading academics

Our courses are delivered by our world-renowned academics and industry practitioners who are leading change across the sector. You will benefit from courses which integrate our internationally-recognised research into the teaching, placing you at the forefront of new techniques and innovations.

3 Outstanding facilities

To help you during your studies we will provide you with access to a host of state-of-the-art facilities, such as the Crop Health and Protection (CHAP) centre, soil health and agri-technology facilities, 3D visualisation suite, the Cranfield Urban Observatory, as well as many more.

4 Projects with industry

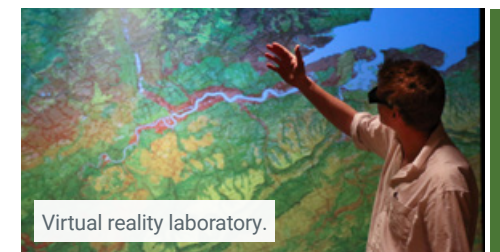
Industry-sponsored group and individual projects enable you to apply the technical knowledge you've gained during the modules to combat issues facing the sector now and in the future.

5 International accreditation

All our MScs are either accredited or seeking accreditation by one or more professional institution. This provides you with the recognition of the academic standard achieved in preparation for employment.

6 Creating leaders in management and technology

Our MScs offer a balance between engineering, technology, science and management, to ensure that whatever your background we have the right course to take your career to the next level. The Environmental Management for Business and Sustainability MSc are delivered in collaboration with our globally renowned School of Management.



Virtual reality laboratory.

Environment courses

Cranfield has been leading the development and implementation of methods for analysing and sustainably managing environmental resources for over 40 years.

Our research is making a positive impact on the environment, society, the growing green economy and the post Covid-19 green economic recovery. We support Government and business in the ongoing move to a low-carbon future. Our courses span environmental analytics, management and resource recovery.

Modules form 40% of the course content, with the group and individual projects making up the other 60%.

This brochure shows the modules being offered in the 2021/2022 academic year, to give you an idea of course content. To keep our courses relevant and up-to-date, modules are subject to change so please check the latest information on our website. All courses are available on a full- or part-time basis and are accredited, see page 9 for more information.

Environmental Engineering

MSc, PgDip, PgCert

www.cranfield.ac.uk/environmentalengineering • Accredited - see page 9

This MSc will equip you with the knowledge and skills to tackle the cross-disciplinary issues of environmental protection and to address the needs of modern urban societies. You will learn principles of environmental improvements, including the protection of environmental quality at both local, landscape and global scales.

Modules

- Catchment Management,
- Cleantech in Water-Energy Food Nexus,
- Environmental Risks: Hazard, Assessment and Management,
- Land Engineering Principles and Practices,
- Modelling Environmental Processes,
- Pollution Prevention and Remediation Technologies,
- Process Emissions and Control,
- Waste Management in a Circular Economy: Reuse, Recycle, Recover and Dispose.

Environmental Management for Business

MSc, PgDip, PgCert

www.cranfield.ac.uk/emb • Accredited - see page 9

This course enables you to develop the advanced theoretical knowledge and practical skills required to critically evaluate complex environmental issues, develop effective strategies and lead their implementation. The diverse nature of the course enables it to attract students from a variety of academic backgrounds, who then progress onto successful careers in business, the public sector or NGOs.

Modules

- Economic Valuation and Appraisal,
- Environmental Innovation,
- Environmental Policy and Risk Governance,
- Evaluating Environmental Sustainability,
- Leading Corporate Sustainability,
- Principles of Sustainability,
- Risk Communication and Perception,
- Strategic Foresight.



Delivered in collaboration with the globally-renowned Cranfield School of Management.

Geographical Information Management

MSc, PgDip, PgCert

www.cranfield.ac.uk/gim • Accredited - see page 9

Developed in response to the increased global demand for multi-disciplinary managers, advisors and consultants in resource management, this course integrates the full range of geospatial technologies. It gives you the expertise you need to develop a career in the global geospatial sector across a wide range of application areas.

Modules

- Advanced GIS Methods,
- Aerial Photography and Digital Photogrammetry,
- Applied Remote Sensing,
- Environmental Resource Survey,
- GIS Fundamentals,
- Spatial Data Management,
- Web Mapping.

Global Environmental Change

MSc, PgDip, PgCert

www.cranfield.ac.uk/gec

This exciting new course has been developed to equip you with the multi-disciplinary knowledge needed to address the various environmental crises driven by climate change, human population growth, land cover and land use change, and pollution. The elective modules will give you the flexibility you need to design your own studies by allowing you to focus on land, water or energy challenges, or select modules across the specialisms for a greater multi-disciplinary grounding.

Compulsory modules

- Cleantech in Water-Energy-Food Nexus,
- Decision Science for Global Environmental Change,
- Fundamentals of Global Environmental Change,
- Sustainable Environmental Solutions.

Elective modules

- Environmental Policy and Risk Governance,
- Good Ecological Status,
- Land Engineering Principles and Practices,
- Leading Corporate Sustainability,
- Managing Flood and Drought Risks,
- Pollution Prevention and Remediation Technologies,
- Process Emissions and Control,
- Technologies for Seeds and Crop Protection,
- Waste Management in a Circular Economy: Reuse, Recycle, Recover and Dispose,
- Water and Sustainable Agrifood Systems.

Sustainability

MSc

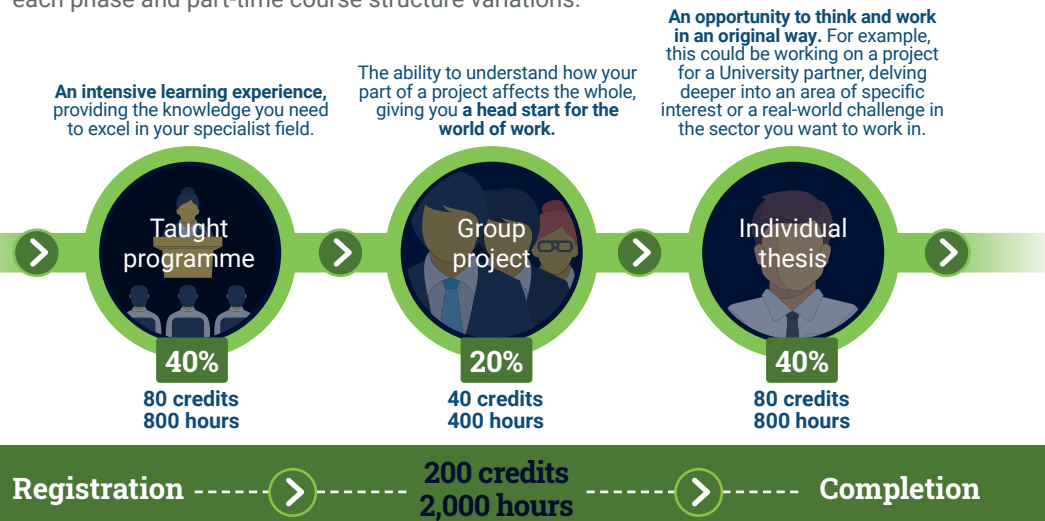
www.cranfield.ac.uk/sustainabilitymsc • Online, part-time or apprenticeship routes available.

The new Sustainability MSc equips leaders with the technical knowledge and management capabilities to drive positive change in their organisations. Bringing together academics from our School of Water, Energy and Environment, and the School of Management, this part-time course is primarily delivered online, with students coming together annually for a three-day Spring School at Cranfield.

Course structure

Our specialist, sector-facing master's courses are set up and developed in close collaboration with industry partners, ensuring the content of our courses remain industry-relevant and employers remain impressed with your business-readiness.

This diagram illustrates the course structure of our full-time master's courses. Please check your course structure online for more detailed information, including the weight of each phase and part-time course structure variations.



Industry-sponsored group projects

This is your opportunity to develop practical skills and take responsibility for a consultancy-type project with industry, working under academic supervision.

Some recent projects include:

- Monitoring landscape change for the **Peak District National Park**.
- Carbon foot-printing baseline for **Speciality Produce**.
- Using multicriteria decision analysis to evaluate the choices and trade-offs implicit with potential futures: case of OxCam Arc for **Research England and OxCam Arc local partners**.
- Future innovations in agricultural and environmental engineering in the UK for **Douglas Bomford Trust (DBT)**.
- Sustainability and self-sufficiency audit for **South Ormsby Estate**.
- Water risks in horticulture for **Speciality Produce**

Industry links

Cranfield has unrivalled links with industry. Our students benefit from our extensive contacts and track record of close collaboration with Government and the environmental sector. These links include industrial advisory panels and project sponsors.

Industrial advisory panels

Our courses are reviewed each year by a panel of industry advisors from leading companies and institutions in the sector. This ensures that the skills you acquire are up-to-date and what employers want.

Some of the companies represented on our environment courses' industrial advisory panels include:



Careers

An exciting career within the environment sector awaits you. Whatever your specialism there are numerous opportunities to shape your career and begin making a significant change to society.

You could soon join our graduates around the world, initiating change to the sector in roles and at organisations such as:

| Environmental Engineering | Environmental Management for Business | Geographical Information Management | Global Environmental Change |
|--|--|---|--|
| <p>Organisations: BP, Deloitte, Golder, Isle Utilities, Lidl UK, National Capital Commission, Ocedis SAS, Syngenta, Thames Water, URS Corporation.</p> <p>Roles: Environmental Consultant, Chemical Engineer, Civil Engineer, Lead Completions Engineer, Senior Consultant, Research Engineer, Supply Planner.</p> | <p>Organisations: Erdenes Oyu Tolgoi, GSK, KPMG, Maersk Management Consulting, National Energy Foundation, O2 (Telefonica UK), UBS, UNDP, World Food Programme.</p> <p>Roles: Account Director, Marketing Manager, National Project Coordinator, Principal Consultant, Project Delivery Manager, Senior Auditor.</p> | <p>Organisations: AECOM, Airbus, British Antarctic Survey, Cyient, Esri, Gloucester City Council, Mouchel, Network Rail, Ordnance Survey, Telespazio Vega.</p> <p>Roles: Business Intelligence Developer, Environmental Specialist, Forestry Coordinator, GIS Analyst, GIS Consultant, GIS Engineer, Planning Engineer.</p> | <p>Upon completion, this MSc will equip you to work in a range of organisations such as consultancies, businesses, think-tanks, and government and non-government organisations.</p> |

Academic staff

You will be taught by a wide range of subject specialists at Cranfield and from outside the University, who draw on their research and industrial expertise to provide stimulating and relevant input to your learning experience.



Dr Monica Rivas Casado, Environment Programme Director

Monica is a Senior Lecturer in Integrated Environmental Monitoring with expertise in state-of-the-art technologies for environmental monitoring. Her academic career has been built around the integration of emerging technologies, advanced statistics and environmental engineering for the design of robust monitoring strategies.

www.cranfield.ac.uk/mrivascasado



Professor Jim Harris, Professor of Environmental Technology

Jim's research is focused on microbial ecology and how the diversity of the microbiota and their spatio-temporal distribution affect ecosystem processes.

www.cranfield.ac.uk/jaharris



Professor Neil Harris, Professor of Atmospheric Informatics

Neil's current research interests are the emissions and impacts of gases connected with climate change, ozone depletion and air quality. Neil was awarded the Natural Environment Research Council Overall Impact Award for his role in the development of the Montreal Protocol on Substances that Deplete the Ozone Layer.

www.cranfield.ac.uk/nharris



Professor Paul Leinster, Visiting Professor of Environmental Assessment

Paul is a former Chief Executive of the Environment Agency. He is also a member of the Government's Natural Capital Committee, the Scottish Government's Rural and Environment Science Strategic Advisory Board and the Institute of Environmental Management and Assessment Board.

www.cranfield.ac.uk/pleinster



Professor Wilfred Otten, Professor of Soil Biophysics

Wilfred has a general research interest in physical, biological and chemical processes in soil. His current and past research has equipped him with multidisciplinary expertise in soil physics, soil chemistry, soil microbiology, epidemiology and mathematical modelling.

www.cranfield.ac.uk/wotten



Professor Jane Rickson, Professor of Soil Erosion and Conservation

Jane is involved in research and training for Government and private sector clients, and specialises in land reclamation, environmental engineering and soil and water management. She is a Chartered Environmentalist and Fellow on the Institution of Agricultural Engineers.

www.cranfield.ac.uk/jrickson

Key facts and statistics

Course information



Full-time
One year



Part-time
Up to three years

See the course page for more information about part-time study.



Start date
October



MSc/PgDip/PgCert

Not all courses offer all awards, see course information for details of awards offered.



Fees

Please see the individual course pages on our website for full fee information and full-time or part-time options. Terms and conditions apply.

See www.cranfield.ac.uk/fee-information

Cohort profile*



Geographic spread
24% UK
36% EU
40% Rest of the world



Average cohort age
19-29 years



Average cohort size
16



43% Female
57% Male

*These figures give an indication of the course make-up at registration across our environment courses for the entry 2020-2021.

Accreditations

The **Environmental Engineering MSc** is accredited by the Chartered Institution of Water and Environmental Management, the Chartered Institution of Wastes Management and the Institution of Agricultural Engineers.

The **Environmental Management for Business MSc** is accredited by the Chartered Institution of Water and Environmental Management, and the Institute of Environmental Management and Assessment.

The **Geographical Information Management MSc** is accredited by the Royal Institution of Chartered Surveyors and the Chartered Institution of Civil Engineering Surveyors.



Financing your studies

If you need advice on funding your course, we can provide information and a range of online tools to help you put together the funding package you need for your course and living costs.

There is more information on our website:
www.cranfield.ac.uk/funding

How to apply

Read more about our entry requirements and how to apply.

www.cranfield.ac.uk/apply



Life at Cranfield

A welcoming, professional campus community.

Located just over an hour from London in the English countryside, Cranfield's campus environment supports close, working relationships between our multinational postgraduate students and academic and industry experts.

www.cranfield.ac.uk/visit



Take a virtual tour to see inside some of our facilities:

virtualtour.cranfield.ac.uk

"The group project was the most enjoyable and inspiring part of my MSc. I had to work with four students from different MSc courses, countries and backgrounds, with a shared vision and a responsibility to deliver an innovative solution to a real business case. Cranfield gave us the opportunity to present our case in the Chartered Institution for Water and Environmental Management (CIWEM) – one of the major global environmental professional bodies – along with other students and different industrial partners."

Kareem El-Sayed, current student,
(Environmental Management for Business MSc)



Cranfield University works with over

1,500 businesses and governments
based in over 40 countries

These organisations include:



Jacobs



For a full list of Cranfield courses, please see our prospectus and website.

www.cranfield.ac.uk/environmentandagrifood

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Every effort is made to ensure that the information in this brochure is correct at the time it is printed. Please check our website for the latest information. Photographs in this publication were taken prior to and during the coronavirus pandemic. We continue to monitor the pandemic and take all the necessary steps to ensure the health, safety and wellbeing of our Cranfield community.

See www.cranfield.ac.uk/coronavirus SWEE-E-September 2021.



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